

Curriculum vitae



Univ. Prof. Dr. rer. nat. habil. Benedikt Jahnel
Greifswalder Straße 198
10405 Berlin, Germany

Diplom mathematician (D)
Diplom music educator (D)
Master of arts (USA)

Born May 28th 1980 in St. Martin D'Herès (France)

Two sons

Research interests

- Probabilistic methods for mobile ad-hoc networks
- Stochastic geometry and interacting particle systems
- Gibbs measures and phase transitions

University education

- 06/2021 Habilitation at Technische Universität Berlin Germany

Stochastic geometry and communication networks & statistical mechanics for point processes and stochastic dynamics
Promoters: Prof. Dr. Wolfgang König, Prof. Dr. Sabine Jansen,
 Prof. Dr. Aernout van Enter, and Prof. Dr. François Baccelli
- 10/2011 - 05/2014 PhD student at Ruhr-University Bochum Germany, member of the DFG project SFB/TR 12 'Symmetries and Universality in Mesoscopic Systems'

Gibbs measures under local discretization and rotation dynamics
Supervisors: Prof. Dr. Christof Külske, Prof. Dr. Aernout van Enter and
 Prof. Dr. Peter Eichelsbacher,
Thesis passed with distinction: Summa cum laude
- 10/2010 - 10/2011 PhD student at Bergische University Wuppertal Germany
- 10/2003 - 10/2010 Diploma student in mathematics at Technische Universität Berlin Germany

The central limit theorem for random walks in Markovian environments
Supervisors: Prof. Dr. Jochen Blath and Prof. Dr. Noemi Kurt
Thesis passed with distinction: Final grade 1.1
- 09/2005 - 06/2007 Master student in music at City College New York USA
Master of arts: GPA 3.9
- 10/2000 - 04/2005 Diploma student in music education at University of Arts Berlin Germany
Diploma in music education: Final grade 1.6

Scientific employments

04/2022 - present	W2-professorship for Stochastics for Applications at Technische Universität Braunschweig
11/2021	Offer for a W2-professorship for Stochastics at Philipps-Universität Marburg (declined)
05/2021 - present	Elected Ombudsperson at the Weierstrass Institute for Applied Analysis and Stochastics (WIAS)
01/2021 - present	Researcher at WIAS, head of the Leibniz group 'Probabilistic Methods for Dynamic Communication Networks'
04/2019	Offer for a PostDoc with tenure track to professorship at Universität Innsbruck (declined)
01/2015 - 12/2020	Researcher at WIAS, member of the research group 'Interacting Random Systems' lead by Prof. Dr. Wolfgang König
06/2014 - 12/2014	PostDoc at Ruhr-University Bochum Germany

Publications and preprints

Stochastic geometry

- 1) with L. Lühtrath: *Existence of subcritical percolation phases for generalised weight-dependent random connection models*, Preprint arXiv:2302.05396 (2023)
- 2) with A. Hinsén, E. Cali, J.-P. Wary: *Chase-escape in dynamic device-to-device networks*, Preprint arXiv:2211.05476 (2022)
- 3) with A. Hinsén, E. Cali, J.-P. Wary: *Connectivity in mobile device-to-device networks in urban environments*, Preprint arXiv:2208.12865 (2022)
- 4) with S. Jhawar, A.D. Vu: *Continuum Percolation in a Nonstabilizing Environment*, Preprint arXiv:2205.15366 (2022)
- 5) with E. Cali, C. Hirsch: *Connection intervals in multi-scale dynamic networks*, Preprint arXiv:2111.13140 (2021)
- 6) with M. Heida, A.D. Vu: *Stochastic homogenization on irregularly perforated domains*, Preprint arXiv:2110.03256 (2021)
- 7) with C. Coletti, L. de Lima, A. Hinsén, D. Valesin: *Limiting shape for first-passage percolation models on random geometric graphs*, Preprint arXiv:2109.07813 (2021)
- 8) with C. Hirsch, S. Muirhead: *Sharp phase transition for Cox percolation*, Electronic Communications in Probability, Vol. 27, No. 48, 1-13 (2022)
- 9) with E. Cali, C. Hirsch: *Percolation and connection times in multi-scale dynamic networks*, Stochastic Processes and their Applications, Vol. 151, 490-518 (2022)
- 10) with A. Tóbiás: *Absence of percolation in graphs based on stationary point processes with degrees bounded by two*, Random Structures and Algorithms, Vol. 62, No. 1, 240-255 (2023)
- 11) with A. Tóbiás, E. Cali: *Phase transitions for the Boolean model of continuum percolation for Cox point processes*, Brazilian Journ. of Probability and Statistics, Vol. 36, No. 1, 20-44 (2022)
- 12) with A. Hinsén, E. Cali, J.-P. Wary: *Phase transitions for chase-escape models on Gilbert graphs*, Electronic Communications in Probability, Vol. 25, No. 25, 1-14 (2020)
- 13) with A. Tóbiás: *Exponential moments for planar tessellations*, Journal of Statistical Physics, Vol. 179, 90-109 (2020)
- 14) with W. König: *Probabilistic methods for telecommunications*, Compact Textbooks Series in Mathematics at Birkhäuser (2020)
- 15) with A. Tóbiás: *SINR percolation for Cox point processes with random powers*, Advances in Applied Probability, Vol. 54, No. 1, 227-253 (2021)
- 16) with C. Hirsch, A. Tóbiás: *Lower large deviations for geometric functionals*, Electronic Communications in Probability, Vol. 25, No. 41, 1-12 (2020)
- 17) with W. König: *Probabilistic methods for spatial multihop communication systems*, Published in: Topics in Applied Analysis and Optimisation, Springer, Vol. 10, 239-268 (2019)
- 18) with C. Hirsch: *Large deviations for the capacity in dynamic spatial relay networks*, Markov Processes and Related Fields, Vol. 25, 33-73 (2019)

- 19) with E. Cali, C. Hirsch: *Continuum percolation for Cox point processes*, Stochastic Processes and their Applications, Vol. 129, 3941-3966 (2019)
- 20) with C. Hirsch, R. Patterson: *Space-time large deviations in capacity-constrained relay networks*, Latin American Journal of Probability and Mathematical Statistics, Vol. 15, 587-615 (2018)
- 21) with C. Hirsch, P. Keeler, R. Patterson: *Large deviations in relay-augmented wireless networks*, Queueing Systems, Vol. 88, No. 3-4, 349-387 (2018)
- 22) with C. Hirsch, P. Keeler, R. Patterson: *Traffic flow densities in large transport networks*, Advances in Applied Probability, Vol. 49, No. 4, 1091-1115 (2017)
- 23) with C. Hirsch, P. Keeler, R. Patterson: *Large-deviation principles for connectable receivers in wireless networks*, Advances in Applied Probability, Vol. 48, 1061-1094 (2016)

Statistical mechanics

- 24) with J. Köppl: *On the long-time behaviour of reversible interacting particle systems in one and two dimensions*, Preprint arXiv:2303.10640 (2023)
- 25) with J. Köppl: *Trajectoryal dissipation of Phi-entropies for interacting particle systems*, Preprint arXiv:2301.03922 (2023)
- 26) with J. Köppl: *Dynamical Gibbs Variational Principles for Irreversible Interacting Particle Systems with Applications to Attractor Properties*, Preprint arXiv:2205.02738 (2022)
- 27) with O. Collin, W. König: *The free energy of a box-version of the interacting Bose gas*, Preprint arXiv:2201.05085 (2022)
- 28) with N. Engler, C. Külske: *Gibbsianness of locally thinned random fields*, To appear at Markov Processes and Related Fields (2022)
- 29) with C. Külske: *Gibbsianness and non-Gibbsianness for Bernoulli lattice fields under removal of isolated sites*, Preprint arXiv:2109.13997 (2021)
- 30) with C. Külske: *Gibbsian representation for point processes via hyperedge potentials*, Journal of Theoretical Probability, <https://doi.org/10.1007/s10959-019-00960-7> (2019)
- 31) with C. Cotar, C. Külske: *Extremal decomposition for random Gibbs measures*, Electronic Communications in Probability, Vol. 23, No. 95 (2018)
- 32) with C. Külske: *Attractor properties for irreversible and reversible interacting particle systems*, Communications in Mathematical Physics, Vol. 366, No. 1, 139-172 (2018)
- 33) with G. Botirov: *Phase transitions for a model with uncountable spin space on the Cayley tree: The general case*, Positivity, Vol. 23, 291–301 (2019)
- 34) with C. Külske: *The Widom-Rowlinson model under spin flip: Immediate loss and sharp recovery of quasilocality*, Annals of Applied Probability, Vol. 27, No. 6, 3845-3892 (2017)
- 35) with C. Külske: *Sharp thresholds for Gibbs-non-Gibbs transition in the fuzzy Potts models with a Kac-type interaction*, Bernoulli Journal, Vol. 23, No. 4A, 2808-2827 (2017)
- 36) with C. Külske: *Attractor properties of non-reversible dynamics w.r.t. invariant Gibbs measures on the lattice*, Markov Processes and Related Fields, Vol. 22, 507-535 (2016)
- 37) with C. Külske: *A class of non-ergodic weak PCAs with unique invariant measure and quasi-periodic orbit*, Stochastic Processes and their Applications, Vol. 125, 2427-2450 (2015)*
- 38) with G. Botirov, C. Külske: *Phase transition and critical values of a nearest-neighbor system with uncountable local state space on Cayley trees*, Mathematical Physics, Analysis and Geometry, Vol. 17, 1385-0172 (2014)
- 39) with C. Külske, E. Rudelli, J. Wegener: *Gibbsian and non-Gibbsian properties of the generalized mean-field fuzzy Potts-model*, Markov Processes and Related Fields, Vol. 20, 601-632 (2014)*
- 40) with C. Külske: *Synchronization for discrete mean-field rotators*, Electronic Journal of Probability, Vol. 19, No. 14 (2014)*
- 41) with C. Külske: *A class of nonergodic interacting particle systems with unique invariant measure*, Annals of Applied Probability, Vol. 24, 2595-2643 (2014)*

Wireless network architecture

- 42) with A. Tóbiás: *Absence of percolation in graphs based on stationary point processes with degrees bounded by two*, Proceedings of the 12th Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications (2023)
- 43) with C. Ghribi, E. Cali, C. Hirsch: *Agent-based simulations for coverage extensions in 5G networks and beyond*, Proceedings of ICIN (2022)
- 44) with Z. Benomar, C. Ghribi, E. Cali, A. Hinsen: *Agent-based modeling and simulation for malware spreading in D2D networks*, Proceedings of AAMAS (2022)
- 45) with A. Hinsen, E. Cali, J.-P. Wary: *Malware propagation in urban D2D networks*, Proceedings of WiOpt/SpaSWIN (2020)

- 46) with C. Hirsch, A. Hinsen, E. Cali: *The typical cell in anisotropic tessellations*, Proceedings of WiOpt/SpaSWiN (2019)
- 47) with E. Cali, N. Gafur, C. Hirsch, T. En-Najjary, R. Patterson: *Percolation for D2D networks on street systems*, Proceedings of WiOpt/SpaSWiN (2018)
- 48) with P. Keeler, O. Maye, D. Aschenbach, M. Brzozowski: *Disruptive events in high-density cellular networks*, Proceedings of WiOpt/SpaSWiN (2018)

Conference, seminar and other talks

- 1) 03/2023 *Random Geometric Systems*, Köln Germany
- 2) 02/2023 *BOS-Workshop on Stochastic Geometry*, Osnabrück Germany
- 3) 01/2023 *Topics in High Dimensional Probability*, Bangalor India
- 4) 11/2022 *IEEE CloudNet 2022*, Paris France
- 5) 08/2022 *Random Geometries and Stochastic Interacting Processes*, Bonn Germany
- 6) 04/2022 *MMS Days*, PIC Potsdam Germany
- 7) 03/2022 *Spring School*, Darmstadt Germany
- 8) 03/2022 *University of Padova*, Padova Italy
- 9) 11/2021 *Stochastic Geometry Days*, Dunkerque France
- 10) 10/2021 *University of Bath*, Bath UK
- 11) 09/2021 *Randomness unleashed*, Groningen The Netherlands
- 12) 07/2021 *Orange Seminar*, Paris France
- 13) 06/2021 *Charité at the Humboldt University*, Berlin Germany
- 14) 05/2021 *Technische Universität*, Berlin Germany
- 15) 01/2021 *Dyogene Seminar INRIA*, Paris France
- 16) 10/2020 *Universität Augsburg*, Augsburg Germany
- 17) 08/2020 *Bernoulli-IMS One World Symposium 2020*, Online
- 18) 11/2019 *Technische Universität*, Hamburg Germany
- 19) 11/2019 *Quaid-i-Azam University Seminar*, Islamabad Pakistan
- 20) 10/2019 *Probability, Analysis and Applications Workshop*, AIMS Ghana
- 21) 07/2019 *SPA Conference*, Evanston USA
- 22) 06/2019 *Phase Transitions and Particle Systems*, Berlin Germany
- 23) 05/2019 *Universität Hildesheim*, Hildesheim Germany
- 24) 04/2019 *Stochastic Modeling of Complex Systems*, Mannheim Germany
- 25) 03/2019 *Universität Innsbruck*, Innsbruck Austria
- 26) 10/2018 *Martin-Luther-Universität*, Halle-Wittenberg Germany
- 27) 10/2018 *University Potsdam Seminar*, Potsdam Germany
- 28) 09/2018 *Ibn Zohr University Seminar*, Agadir Morocco
- 29) 09/2018 *TU Darmstadt Seminar*, Darmstadt Germany
- 30) 07/2018 *Topics in Mathematical Physics*, Sao Paolo Brazil
- 31) 07/2018 *Geometry and Scaling of Random Structures*, Buenos Aires Argentina
- 32) 06/2018 *Universität Mannheim*, Mannheim Germany
- 33) 05/2018 *International School in Model & Simulation Based Research*, Berlin Germany
- 34) 05/2018 *Universität Leipzig*, Leipzig Germany
- 35) 04/2018 *Universidad Carlos III de Madrid Seminar*, Madrid Spain
- 36) 03/2018 *Random Structures in Neuroscience and Biology*, Herrsching Germany
- 37) 03/2018 *Evolutionary Processes on Networks*, Kigali Ruanda
- 38) 02/2018 *German Stochastic Days*, Freiburg Germany
- 39) 02/2018 *University Osnabrück Seminar*, Osnabrück Germany
- 40) 01/2018 *Transformations and Phase Transitions*, Bochum Germany
- 41) 11/2017 *Ruhr Universität Bochum*, Bochum Germany
- 42) 04/2017 *Technion Workshop on Stochastic Analysis and Random Fields*, Haifa Israel
- 43) 09/2017 *Sharif University Seminar*, Tehran Iran
- 44) 04/2017 *University Mainz Seminar*, Mainz Germany
- 45) 03/2017 *University Luxembourg Seminar*, Luxembourg
- 46) 02/2017 *LMU München Seminar*, München Germany
- 47) 01/2017 *WWU Münster Seminar*, Münster Germany
- 48) 10/2016 *Transformations in Statistical Mechanics*, Leiden Netherlands
- 49) 07/2016 *Regensburg University Seminar*, Regensburg Germany
- 50) 03/2016 *German Stochastic Days*, Bochum Germany
- 51) 03/2016 *Universität Mannheim*, Mannheim Germany
- 52) 02/2016 *Bucharest University Seminar*, Bucharest Romania
- 53) 11/2015 *Research Institute for Mathematical Sciences Seminar*, Kyoto Japan

- 54) 09/2015 *Recent Trends in Stochastic Analysis*, Hamburg Germany
- 55) 05/2015 *Marc Kac Seminar*, Utrecht Netherlands
- 56) 09/2014 *Applied and Geometrical Analysis*, Samarkand Uzbekistan
- 57) 03/2014 *German Stochastic Days*, Ulm Germany
- 58) 02/2014 *Symmetries & Universality in Mesoscopic Systems*, Langeoog Germany
- 59) 02/2014 *Spatial Models in Statistical Mechanics*, Darmstadt Germany
- 60) Since 2014 12 talks on popular science

Referee work

Electronic Journal of Probability; Electronic Communications in Probability; Applied Probability Journals; Annals of Applied Probability; Reports on Mathematical Physics; European Journal of Pure and Applied Mathematics; Journal of Statistical Physics; Phase Transitions; National Research, Development and Innovation Office of Hungary; Markov Processes and Related Fields; DAAD; Entropy; Czech Science Foundation; Journal of Applied and Computational Topology; Indian Journal of Pure and Applied Mathematics

Organized workshops, conferences and sessions

- 10/2022 *Recent Trends in Spatial Stochastic Processes*, TU Eindhoven, The Netherlands
- 06/2022 Random Point Processes in Statistical Physics, Weierstrass Institute Berlin
- 10/2021 4-year *EURANDOM Ambassadorship*, TU Eindhoven, The Netherlands
- 11/2020 *Stochastic Geometry and Communications*, Weierstrass Institute Berlin
- 10/2019 *Probability, Analysis and Applications Workshop*, AIMS Accra, Ghana
- 07/2019 *SPA Contributed Session*, Northwestern University Evanston, USA
- 11/2018 *WIAS - PDI Open Access Day*, Weierstrass Institute Berlin
- 02/2017 *WIAS Days*, Weierstrass Institute Berlin
- 11/2016 *Probabilistic Methods in Telecommunication*, Weierstrass Institute Berlin

Funding

Research grants

- 10/2022 - 10/2022 NETWORKS Workshop Support: *Recent Trends in Spatial Stochastic Processes* (budget 8,000 € with Dr. Horn and Prof. Kumjathy)
- 10/2022 - 10/2022 STAR Workshop Support: *Recent Trends in Spatial Stochastic Processes* (budget 4,250 € with Dr. Horn and Prof. Kumjathy)
- 10/2022 - 10/2022 EURANDOM Workshop Support: *Recent Trends in Spatial Stochastic Processes* (budget 17,000 €)
- 10/2022 - 10/2023 ECAS Fellowship: *Random periodic orbits and periodic measures in interacting particle systems* (budget approx. 1,000 € with Dr. Wu)
- 01/2021 - 12/2026 Leibniz Junior Research Group: *Probabilistic Methods for Dynamic Communication Networks* (budget 1,000,000 €, PI)
- 01/2021 - 12/2023 DFG research grant: *Statistical Mechanics of Interlacement Processes* (budget 350,000 €, PI together with Prof. König and Prof. Drewitz)
- 01/2019 - 09/2022 Math+ research grant: *Influence of Mobility on Connectivity* (budget 172,000 €, PI together with Prof. König)
- 09/2018 - 08/2022 DAAD research grant: *Gibbs Measures on Random Processes* (budget 200,000 €, PI together with Prof. König and Prof. Becherer)
- 06/2017 - 12/2018 ECMath research grant: *Data Mobility in Ad-hoc Networks: Vulnerability & Security*, (budget 86,000 € together with Prof. König)
- 10/2010 - 10/2011 DFG research grant proposal: *SDEs Describing Critical Fluctuations in a Van der Waals – Maxwell gas* (granted after leave)

Industry collaborations

- 09/2020 - 08/2021 Cooperation with major French telecommunication company: *Malware Propagation in Mobile Device-to-Device Networks* (budget 35,000 €)
- 12/2019 - 11/2020 Cooperation with major French telecommunication company: *Connectivity Improvements in Mobile D2D Networks* (budget 35,000 €)

12/2018 - 11/2019	Cooperation with major French telecommunication company: <i>Coverage and Mobility in D2D Networks</i> (budget 35,000 €)
07/2018 - 06/2019	Cooperation with major French telecommunication company: <i>Data Mobility in Networks: Vulnerability & Security</i> (budget 35,000 €)
11/2017 - 09/2018	Cooperation with major French telecommunication company: <i>The Typical Cell in Anisotropic Tessellations</i> (budget 29,000 €)
11/2016 - 10/2017	Cooperation with major French telecommunication company: <i>Continuum Percolation Theory Applied to D2D</i> (budget 35,000 €)

Scholarships and awards

09/2005 - 05/2007	DAAD postgraduate scholarship
01/2000 - 08/2011	Several music awards

Teaching

Certificate 'Professional Teaching at Universities' (200h): Moderation, motivation, time-management, presentation techniques, etc.

Lectures

04/2022 - 07/2022	<i>Geometry</i> (2 SWS, TU Braunschweig)
04/2023 - 07/2023	<i>Probability Theory and Discrete Financial Mathematics</i> (4 SWS, TU Braunschweig)
10/2022 - 02/2023	<i>Introduction to Probability Theory</i> (4 SWS, TU Braunschweig)
04/2022 - 07/2022	<i>Probability Theory and Discrete Financial Mathematics</i> (4 SWS, TU Braunschweig)
04/2020 - 07/2020	<i>Spin Systems and Phase Transitions</i> , (2 SWS, TU Berlin), with Dr. Taggi
04/2018 - 07/2018	<i>Spatial Stochastic Models for Telecommunications</i> , (2 SWS, TU Berlin), with Prof. König, new lecture notes and book
10/2017 - 02/2018	<i>Mathematics for Engineers</i> (4 SWS, TU Berlin), codesign of new combined module for analysis and linear algebra

Seminars

04/2022 - 07/2022	<i>Bachelor Seminar in Stochastics</i> (2 SWS, TU Braunschweig)
04/2020 - 07/2020	<i>Spin Systems and Phase Transitions</i> , (2 SWS, TU Berlin), with Dr. Taggi
04/2018 - 07/2018	<i>Spatial Stochastic Models for Telecommunications</i> (2 SWS, TU Berlin), with Prof. König
04/2011 - 07/2011	<i>Interacting Particle Systems</i> (2 SWS, Bergische University Wuppertal)

Minicourses

07/2023 - 07/2023	<i>Percolation Theory</i> , (4 lectures, Probability and Geometry on Configuration Spaces, Berlin)
08/2022 - 08/2022	<i>Introduction to Percolation Theory</i> , (2 lectures, Hausdorff Center for Mathematics, Bonn)
09/2019 - 10/2019	<i>Introduction to Probability Theory</i> (10 lectures, AIMS Ghana)
09/2018 - 09/2018	<i>Spatial Stochastic Models with Applications in Telecommunications</i> (4 lectures, University Osnabrück summer school)
08/2017 - 08/2017	<i>Stochastic Geometry in Telecommunications</i> , (3 lectures, TU Berlin summer school)

Assistances

10/2014 - 02/2015	<i>Ordinary Differential Equations</i> (lecture, Ruhr-University Bochum)
04/2014 - 07/2014	<i>Random Walks on Graphs</i> (seminar, Ruhr-University Bochum)
10/2012 - 02/2013	<i>Mathematics for Physicists</i> (lecture, Ruhr-University Bochum)
04/2012 - 07/2012	<i>Statistics I</i> (lecture, Ruhr-University Bochum)
10/2011 - 02/2012	<i>Probability Theory II</i> (lecture, Ruhr-University Bochum)

10/2010 - 02/2011 *Probability Theory I* (lecture, Bergische University Wuppertal)

Additional teaching in music

09/2006 - 05/2007 *Jazz Ensembles* (assistant, City College New York)
10/2003 - 02/2004 *Eartraining & Music Theory* (assistant, University of Arts Berlin)
01/2006 - present *Jazz Masterclasses* (internationally)

Supervision

Leibniz Academy Certificate 'Leadership Development Program' (90h): self-leadership, leading others, collegial case consultation

PostDoc

ongoing *Interacting Particle Systems*
(TU Braunschweig, primary supervisor)
ongoing *Long-range Percolation*
(WIAS, primary supervisor)
ongoing *Large Deviations for the Throughput in Wireless Networks*
(WIAS, primary supervisor)

PhD

ongoing *Statistical Mechanics*
(TU Braunschweig, primary supervisor)
ongoing *Statistical Physics of Communication Networks*
(WIAS, primary supervisor)
ongoing *Mobility in Ad-hoc Networks*
(WIAS, primary supervisor)
ongoing *Large Deviations for Routings in Wireless Networks*
(WIAS, primary supervisor)
01/2022 *The Modification of Boolean Models in Random Network Analysis*
(University of Osnabrück, external examiner)

Diplom

10/2021 *Große Abweichungen des Durchsatzes bei zufälligen Mediumzugangsprotokollen* (TU Berlin, secondary supervisor, with Prof. König)

Master

ongoing *Ein Mean-Field Modell für das interagierende Bosegas*
(TU Berlin, secondary supervisor, with Prof. König)
ongoing *Large deviations for high interferences*
(TU Berlin, secondary supervisor, with Prof. König)
08/2022 *Strategien für Zugänge zu einem Kommunikationsmedium*
(TU Berlin, secondary supervisor, with Prof. König)
06/2022 *Degree distributions in dense communication networks*
(AIMS Ghana, primary supervisor)
06/2022 *A random box version of the interacting Bose gas*
(Uni Potsdam, secondary supervisor, with Prof. König)
04/2022 *Dynamical Gibbs variational principles for irreversible interacting particle systems* (TU Berlin, primary supervisor)
05/2021 *Gibbsianness of locally-thinned random fields*
(TU Berlin, primary supervisor)
10/2020 *Charakteristika zufälliger Kachelungen*
(TU Berlin, secondary supervisor, with Prof. König)
11/2019 *Die Kapazität in einem hochdichten D2D-Netzwerk*
(TU Berlin, secondary supervisor, with Prof. König)
10/2019 *Ein diskretes Modell für zufällige Nachrichtentrajektorien*
(TU Berlin, secondary supervisor, with Prof. König)
08/2019 *Zufällige Nachrichtenhopentscheidungen in einem Kommunikationssystem*
(TU Berlin, secondary supervisor, with Prof. König)
06/2019 *Percolation phase transitions for the SIR model with random powers*
(TU Berlin, secondary supervisor, with Prof. König)
03/2019 *Die Kapazität in einem hochdichten D2D Netzwerk*

- 12/2018 (TU Berlin, secondary supervisor, with Prof. König)
Ein Gibbs'sches Modell für Verkehrsfluss
- 07/2018 (TU Berlin, secondary supervisor, with Prof. König)
Markov Chain Monte Carlo for Message Routing
- 12/2017 (TU Berlin, secondary supervisor, with Prof. König)
Informationskapazität in großen zufälligen Kommunikationsnetzwerken
- 04/2017 (TU Berlin, secondary supervisor, with Prof. König)
Modellierung und Analyse eines hochdichten zufälligen Telekommunikations-systems (TU Berlin, secondary supervisor, with Prof. König)
- 09/2013 *Phase Transitions in the Generalized Potts and Fuzzy Potts Models in Mean Field* (Ruhr-University Bochum, informal co-supervision, with Prof. Külske)
- 09/2013 *Gibbs Properties of the Generalized Potts and Fuzzy Potts Model in Mean Field* (Ruhr-University Bochum, informal co-supervision, with Prof. Külske)

Bachelor

- ongoing *k-Nachbar Perkolation*
(TU Braunschweig, primary supervisor)
- ongoing *Große Abweichungen für den Durchsatz bei Datenübertragungsprotokollen*
(TU Berlin, secondary supervisor, with Prof. König)
- ongoing *Der Durchsatz in einem ALOHA Protokoll mit mehreren Kanälen*
(TU Berlin, secondary supervisor, with Prof. König)
- ongoing *Ein interagierendes Bose-Gas im hydrodynamischen Grenzwert*
(TU Berlin, secondary supervisor, with Prof. König)
- 11/2022 *Characterisation of the phases in continuum percolation*
(TU Berlin, secondary supervisor, with Prof. König)
- 09/2022 *Erfolgsrate in ALOHA-Protokollen für Medienzugang*
(TU Berlin, secondary supervisor, with Prof. König)
- 09/2022 *Phasenübergang in einem modifizierten freien Bosegas*
(TU Berlin, secondary supervisor, with Prof. König)
- 07/2022 *Ein Meanfield-Modell für das interagierende Bosegas*
(TU Berlin, secondary supervisor, with Prof. König)
- 05/2022 *Gemischte Perkolation*
(TU Berlin, secondary supervisor, with Prof. König)
- 04/2022 *Analyticity of the capacity functional of the Infinite cluster in the Boolean model* (TU Berlin, secondary supervisor, with Prof. König)
- 02/2022 *Fixation on Abelian graphs*
(TU Berlin, secondary supervisor, with Prof. König)
- 11/2021 *k-hop Perkolation*
(TU Berlin, secondary supervisor, with Prof. König)
- 10/2021 *Occurrence of Bose-Einstein condensate*
(TU Berlin, secondary supervisor, with Prof. König)
- 10/2021 *Konvergenzgeschwindigkeit des Random-Waypoint-Modells gegen ihre invariante Verteilung* (TU Berlin, secondary supervisor, with Prof. König)
- 08/2021 *Die Konvergenz des Random-Waypoint-Modells in die invariante Verteilung*
(TU Berlin, secondary supervisor, with Prof. König)
- 06/2021 *Konnektivität via empirische Maße und deren große Abweichungen*
(TU Berlin, secondary supervisor, with Prof. König)
- 01/2021 *Large Deviations for High Interferences*
(TU Berlin, secondary supervisor, with Prof. König)
- 10/2019 *Ausdünnung eines Punktprozesses und Sendestrategien*
(TU Berlin, secondary supervisor, with Prof. König)
- 12/2018 *Stochastische Entscheidungsprobleme zur Vermeidung von Interferenz*
(TU Berlin, secondary supervisor, with Prof. König)
- 11/2018 *Stochastische Entscheidungsprobleme in Multihopsystemen*
(TU Berlin, secondary supervisor, with Prof. König)
- 05/2018 *Optimierung des Durchsatzes mit kontinuierlicher Perkolation*
(TU Berlin, secondary supervisor, with Prof. König)
- 10/2017 *Ein Gibbs-Ansatz für Nachrichtentrajektorien in einem hochdichten Kommunikationsnetzwerk* (TU Berlin, secondary supervisor, with Prof. König)
- 03/2017 *Perkolation mit Interferenz bei beschränkter Sprungzahl*
(TU Berlin, secondary supervisor, with Prof. König)
- 05/2011 *Renewal Theory*
(Ruhr-University Bochum, informal co-supervision, with Prof. Külske)